MULTI SPECIES CONSERVATION STRATEGY MILESTONE 98 -- ROLLED UP SUMMARY

MILESTONE 98 -- Initiate a feasibility study of restoring steelhead migration into upper watershed areas (e.g., upstream of major low-elevation dams) in at least one San Joaquin River Basin EMZ Tributary.		**PROJECTS REVIEWED -** AFRP-02-02, AFRP-02-03, ERP-98-N02		**SUMMARY --** These AFRP contracts could provide a feasibility study of restoring steelhead migration into upper watershed areas (e.g., upstream of major low-elevation dams) in at least one San Joaquin River Basin EMZ Tributary. One ERP Contract evaluates opportunities for fish passage above dams on a landscape level. One contract funds a project titled: A Feasibility Investigation of Reintroduction of Anadromous Salmonids Above Crocker-Huffman Dam on the Merced River. This project could fulfill this milestone, but has been hampered by access problems to the targeted river reach and has been delayed. Access options are being explored. The other AFRP project is intended to develop a consensus based plan to direct the long term implementation of prioritized restoration/research in the Stanislaus River below Goodwin Dam. Data is being analyzed and planning work continues. Determination of whether this reach of the Stanislaus constitutes an upper watershed area must be made.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 98 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
98	SJR	SR	Initiate a feasibility study of restoring steelhead migration into upper watershed areas (e.g., upstream of major low-elevation dams) in at least one San Joaquin River Basin EMZ Tributary.		98 A. Status of Initiating a feasibility study of restoring steelhead migration into upper watershed areas (e.g., upstream of major low-elevation dams) in the Stanislaus River Ecological Management Unit	AFRP-02-02						AFRP	JD Wikert USFWS		Develop a Consensus Based Plan to Direct the Long Term Implementation of Prioritized Restoration/Research in the Stanislaus River Below Goodwin Dam	Objective: Develop a consensus based plan to direct the long term implementation of prioritized restoration/research in the Stanislaus River below Goodwin Dam. ***The project is currently focused on finishing a summary of the existing fisheries data. The summary will be provided to the Stanislaus River Fish Group for review and comment in January 2004. Work continues on the Restoration Plan and conceptual model.***
98	SJR	SR			98 A. Status of Initiating a feasibility study of restoring steelhead migration into upper watershed areas (e.g., upstream of major low-elevation dams) in the Stanislaus River Ecological Management Unit	ERP-98-N02	Oct-98	Mar-00	49,000	71,000	120,000	Institute for Fisheries Resources (IFR)	Dr. Guy D. Phillips		Expanding California Salmon Habitat to Alter Dams and Diversions	The project has five basic features: 1) document the extent, timing, and financing of the opportunity for acquisition/modification of private dams from willing sellers, (2) identify candidate Central Valley sites, (3) develop a template for analysis and resolution of issues for use by the public and agencies for all potential sites, (4) develop a private sector mechanism to acquire dams from willing sellers, and (5) conduct community and peer review workshops. Contributes to fish passage in all EMZs. ***William F. "Zeke" Grader, Institute for Fisheries Resources. Planning***
98	SJR	SR			98 B. Status of Initiating a feasibility study of restoring steelhead migration into upper watershed areas (e.g., upstream of major low-elevation dams) in the Tuolumne River Ecological Management Unit	ERP-98-N02	Oct-98	Mar-00	49,000	71,000	120,000	Institute for Fisheries Resources (IFR)	Dr. Guy D. Phillips		Expanding California Salmon Habitat to Alter Dams and Diversions	The project has five basic features: 1) document the extent, timing, and financing of the opportunity for acquisition/modification of private dams from willing sellers, (2) identify candidate Central Valley sites, (3) develop a template for analysis and resolution of issues for use by the public and agencies for all potential sites, (4) develop a private sector mechanism to acquire dams from willing sellers, and (5) conduct community and peer review workshops. Contributes to fish passage in all EMZs. ***William F. "Zeke" Grader, Institute for Fisheries Resources. Planning***

98	SJR	SR			98 C. Status of Initiating a feasibility study of restoring steelhead migration into upper watershed areas (e.g., upstream of major low-elevation dams) in the Merced River Ecological Management Unit	AFRP-02-03						AFRP	Jeff McLain USFWS		A Feasibility Investigation of Reintroduction of Anadromous Salmonids Above Crocker-Huffman Dam on the Merced River	Objective: Examine the opportunities and constraints of anadromous salmonid reintroduction upstream of Crocker-Huffman Dam by analysis of biological and technical issues associated with the potential for establishing migratory passage and fish protection at Crocker Huffman Dam, investigate the biological production potential of the riverine habitat between Crocker-Huffman and Merced Falls dams for anadromous salmonids, and assess the implications for, and interactions of such a restoration action with ongoing and future planned Merced River Hatchery operations. ***This contract was awarded in August of 2002. River habitat exploration has been delayed due to access problems. TID and Natural Resource Scientists are currently pursuing boat launch possibilities.***
98	SJR	SR			98 C. Status of Initiating a feasibility study of restoring steelhead migration into upper watershed areas (e.g., upstream of major low-elevation dams) in the Merced River Ecological Management Unit	ERP-98-N02	Oct-98	Mar-00	49,000	71,000	120,000	Institute for Fisheries Resources (IFR)	Dr. Guy D. Phillips		Expanding California Salmon Habitat to Alter Dams and Diversions	The project has five basic features: 1) document the extent, timing, and financing of the opportunity for acquisition/modification of private dams from willing sellers, (2) identify candidate Central Valley sites, (3) develop a template for analysis and resolution of issues for use by the public and agencies for all potential sites, (4) develop a private sector mechanism to acquire dams from willing sellers, and (5) conduct community and peer review workshops. Contributes to fish passage in all EMZs. ***William F. "Zeke" Grader, Institute for Fisheries Resources. Planning***

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 99 -- ROLLED UP SUMMARY

MILESTONE 99 -- Install positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the San Joaquin River Basin. Among those diversions to be screened are the El Solyo, Patterson, and West Stanislaus irrigation district diversions.		**PROJECTS REVIEWED -** ERP-01-N56, ERP-02-P16, AFRP-02-02		**SUMMARY --** Two ERP contracts were let to Patterson Irrigation District to conduct the planning, design, and environmental review necessary for installation of a positive barrier fish screen and is about 10% completed. The AFRP contract funding the "Consensus Based Plan to Direct the Long Term Implementation of Prioritized Restoration/Research in the Stanislaus River Below Goodwin Dam" could contribute in an indirect way to completion of this milestone. There are only 2 diversions > 250 cfs and there are 472 smaller unscreened diversions (25% equals 118). No positive barrier fish screens have been installed on any diversions in the San Joaquin River Basin and none of the specifically targeted diversions have been screened; the El Solyo (5 diversions - 46.5cfs), Patterson (195 cfs), and West Stanislaus (400 cfs) irrigation district diversions.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 99 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
99	SJR	SR	Install positive barrier fish screens on all diversions greater than 250 cfs in all EMZs and 25% of all smaller unscreened diversions in the San Joaquin River Basin. Among those diversions to be screened are the El Solyo, Patterson, and West Stanislaus irrigation district diversions.		99 A. Status of installing positive barrier fish screens on all diversions greater than 250 cfs in the San Joaquin River Basin EMZ											
99	SJR	SR			99 B. Status of installing positive barrier fish screens on 25 % of all smaller diversions in the San Joaquin River Basin EMZ											
99	SJR	SR			99 C. Status of installing a positive barrier fish screen at El Solyo district diversion											
99	SJR	SR			99 D. Status of installing a positive barrier fish screen at Patterson district diversion	ERP-01-N56	Aug-01	Jun-02	175,000		175,000	Patterson Irrigation District	John Sweigard		Patterson Irrigation District Positive Fish Barrier Fish Screen Study on San Joaquin River Diversion	This project develops the design and specifications for a fish screen for the 195 CFS diversion on the San Joaquin River for the Patterson Irrigation District. ***Planning, Feasibility, and Design project completed; John Swiegard, Patterson Irrigation District.***
99	SJR	SR			99 D. Status of installing a positive barrier fish screen at Patterson district diversion	ERP-02-P16	Sep-03	Sep-04	611,000		611,000	Patterson Irrigation District	John Sweigard		Patterson Irrigation District Fish Screen Design and Environmental Review	Installation of a positive barrier fish screen. ***John Sweigard, Patterson Irrigation District. Planning and Design. This is a new project that is just getting started; 10% complete.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
99	SJR	SR			99 E. Status of installing a positive barrier fish screen at West Stanislaus district diversion	AFRP-02-02						AFRP	JD Wikert USFWS		Develop a Consensus Based Plan to Direct the Long Term Implementation of Prioritized Restoration/Research in the Stanislaus River Below Goodwin Dam	Objective: Develop a consensus based plan to direct the long term implementation of prioritized restoration/research in the Stanislaus River below Goodwin Dam. ***The project is currently focused on finishing a summary of the existing fisheries data. The summary will be provided to the Stanislaus River Fish Group for review and comment in January 2004. Work continues on the Restoration Plan and conceptual model.***

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 100 -- ROLLED UP SUMMARY

MILESTONE 100 -- Actions to minimize or eliminate low dissolved oxygen conditions (DO sag) in lower San Joaquin River near Stockton (from Phase II Report):
· Complete studies of causes for DO sag in San Joaquin River near Stockton.
· Define and implement corrective measures for DO sag.
· Finalization of investigation of methods to reduce constituents that cause low DO for inclusion in total maximum daily load (TMDL) recommendation by the Central Valley RWQCB.
· Finalization of Basin Plan Amendment and TMDL for constituents that cause low DO in the San Joaquin River.
· Implement appropriate source and other controls and other management practices, as recommended in the TMDL, to reduce anthropogenic oxygen depleting substances loadings and minimize or eliminate low DO conditions.

PROJECTS REVIEWED - ERP-02D-P63

SUMMARY -- The results from the studies funded in 1999 (ERP-99-B16) and 2001 (ERP-01-N61) have provided substantial information on the sources and causes of low dissolved oxygen (DO sag) in the San Joaquin River. This was further validated in the Peer Review Report from July, 2002. These studies and the Peer Review recommendations provide the basis for a plan of further studies upstream, construction of an aeration demonstration project, and other pilot projects. The studies provided the basis for a stakeholder implementation plan and progress on development of the TMDL for the RWQCB. A draft Basin Plan Amendment will be available for public review in April 2004 and scheduled for consideration for adoption by the CVRWQCB in July, 2004. The Basin Plan Amendment will propose a phased approach to correct the DO problem. The phased approach includes a demonstration aeration project in the DWSC, further study of upstream sources, and control of Stockton WTP discharges.

SUMMARY continued- The aeration project is considered to be an interim control solution while more detailed studies on the upstream sources of oxygen depleting substances are completed. A final Basin Plan Amendment for the DO will be completed in 2008. The remaining studies on sources and causes (contract under development) and the modeling projects (ERP-02D-P50 and ERP-02D-P51) should be completed in 2007. In the interim, dissolved oxygen conditions should improve following completion and activation of the aeration demonstration project (2005). The final implementation solution will be identified in 2008 as part of the final TMDL. There are other projects under different grant programs (SWRCB Prop 50 Grants) that contribute to this milestone but were not evaluated. The dissolved oxygen issue and the current and future actions will affect the SJR in both the Delta and San Joaquin River regions.

AGENCY NOTES --

NOTES CONT'D --

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 100 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
100	SJR	SR	Actions to minimize or eliminate low dissolved oxygen conditions (DO sag) in lower San Joaquin River near Stockton (from Phase II Report): · Complete studies of causes for DO sag in San Joaquin River near Stockton. · Define and implement corrective measures for DO sag. · Finalization of investigation of methods to reduce constituents that cause low DO for inclusion in total maximum daily load (TMDL) recommendation by the Central Valley RWQCB. · Finalization of Basin Plan Amendment and TMDL for constituents that cause low DO in the San Joaquin River. · Implement appropriate source and other controls and other management practices, as recommended in the TMDL		100 A. Status of studies determining the causes for DO sag in the San Joaquin River near Stockton.	ERP-02D-P63	Mar-03		6,886,960	1,083,463	7,970,424	San Joaquin Valley Drainage Authority	Dan Nelson		Monitoring and Investigations of the San Joaquin River and Tributaries Related to Dissolved Oxygen	This directed action study is focused on understanding the sources of oxygen-consuming materials in the SJR upstream of the DWSC. The purpose of this study is to provide a comprehensive understanding of the sources and fate of oxygen-consuming materials in the SJR watershed between Channel Point and Lander Avenue.
100	SJR	SR			100 B. Status of defining and implementing corrective measures for DO Sag											

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
100	SJR	SR			100 C. Status of investigation of methods to reduce constituents that cause low DO for inclusion in total maximum daily load recommendation by the Central Valley RWQCB.											
100	SJR	SR			100 D. Status of finalization of Basin Plan Amendment for TMDL for constituents that cause low DO in the San Joaquin River.											
100	SJR	SR			100 E. Status of implementation of appropriate source and other controls and other management practices to reduce anthropogenic oxygen depleting substances loadings and minimize or eliminate low DO conditions.											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 101 -- ROLLED UP SUMMARY

MILESTONE 101 -- Develop, implement, and support measures to reduce pollutant (oxygen depleting substances, nutrients, and ammonia) discharges from concentrated animal feeding operations. (from Phase II Report)		**PROJECTS REVIEWED -** ERP-98-B32		**SUMMARY --** This project has contributed more indirectly to outreach/education and new data about water quality impacts from animal feeding operations. Study results show the animal waste is a significant source of nitrate in the SJR and tributaries. It is unclear how the outreach/education project has impacted animal feeding practices and discharges to the SJR. There may be other projects under different grant programs (SWRCB 319 (j) or Prop 50) that would contribute more directly to this milestone. Other projects were not evaluated. See milestones 27, 45, and 73 for additional projects that address this milestone at a landscape level.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 101 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
101	SJR	SR	Develop, implement, and support measures to reduce pollutant (oxygen depleting substances, nutrients, and ammonia) discharges from concentrated animal feeding operations. (from Phase II Report)		101 A. Status of development of measures to reduce pollutant (oxygen depleting substances, nutrients, and ammonia) discharges from concentrated animal feeding operations. (from Phase II Report)	ERP-98-B32	Nov-98	Feb-99	28,000	0	28,000	Committee for Sustainable Agriculture	Cathy Holden		Environmental Agriculture Conferences and Field Tours	Provides educational conferences about environmentally sound agricultural practices that can be used by local growers, ranchers, dairies, agricultural advisors, and industrial related natural resources of the San Joaquin River and the Stanislaus, Merced and Tuolumne tributaries. ***Zea Sonnabend, Ecological Farming Association. Education; project completed.***
101	SJR	SR			101 B. Status of implementing measures to reduce pollutant (oxygen depleting substances, nutrients, and ammonia) discharges from concentrated animal feeding operations (from Phase 11 Report)											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 102 -- ROLLED UP SUMMARY

MILESTONE 102 -- Actions to minimize or eliminate inter-substrate low dissolved oxygen conditions in salmonid spawning and rearing habitat, especially in the Mokelumne, Cosumnes, American, Merced, Tuolumne, and Stanislaus Rivers (from Phase II Report and Water Quality Program Plan): · Develop inter-substrate DO testing for salmonid spawning and rearing habitat. · Conduct comprehensive surveys to assess the extent and severity of inter-substrate low DO conditions. · Develop and begin implementing appropriate best management practices (BMPs), including reducing anthropogenic fine sediment loads, to minimize or eliminate inter-substrate low DO conditions.	**PROJECTS REVIEWED -** ERP-97-N21		**SUMMARY --** There are no ERP studies that specifically address inter-substrate low dissolved oxygen conditions for spawning and rearing habitat. Two projects contribute to this milestone. One project resulted in gravel replenishment to improve critical fisheries habitat and may have resulted in improved inter-substrate DO (specific information for DO was not available). The other project resulted in improvements in soil erosion and sedimentation. There may be other projects under different grant programs that would contribute more directly to this milestone but were not evaluated. See milestone 74 for additional projects that address this milestone at a landscape level.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 102 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
102	SJR	SR	Actions to minimize or eliminate inter-substrate low dissolved oxygen conditions in salmonid spawning and rearing habitat, especially in the Mokelumne, Cosumnes, American, Merced, Tuolumne, and Stanislaus Rivers (from Phase II Report and Water Quality Program Plan): · Develop inter-substrate DO testing for salmonid spawning and rearing habitat. · Conduct comprehensive surveys to assess the extent and severity of inter-substrate low DO conditions. · Develop and begin implementing appropriate best management practices (BMPs), including reducing anthropogenic fine sediment loads, to minimize or eliminate		102 A. Status of actions to minimize or eliminate inter-substrate low dissolved oxygen conditions in salmonid spawning and rearing habitat, especially in the Mokelumne, Cosumnes, American, Merced, Tuolumne, and Stanislaus Rivers (from Phase II Report and Water Quality Program Plan):	ERP-97-N21	Sep-98	Sep-01	536,410	97,000	633,410	Carl Mesick Consultants	Carl Mesick		Knights Ferry Gravel Replenishment	This project will minimize DO conditions. ***Implementation project completed. JD Wikert, USFWS.***
102	SJR	SR			102 B. Status of the development of inter-substrate DO testing for salmonid spawning and rearing habitat.											
102	SJR	SR			102 C. Status of conducting comprehensive surveys to assess the extent and severity of inter-substrate low DO conditions.											
102	SJR	SR			102 D. Status of developing and begin implementing appropriate best management practices (BMPs), including reducing anthropogenic fine sediment loads, to minimize or eliminate inter-substrate low DO conditions.											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 103 -- ROLLED UP SUMMARY

MILESTONE 103 -- Assess the ecological effects of low DO conditions in Suisun Marsh due to adding oxygen-depleted water from anthropogenic sources (from Water Quality Program Plan).		**PROJECTS REVIEWED -**		**SUMMARY --** No contracts have been awarded that assess the ecological effects of low DO conditions in Suisun Marsh due to adding oxygen-depleted water from anthropogenic sources. This Milestone needs to be modified to fit the San Joaquin River region unless it is intended to address known effects on the Suisun Marsh by the SJR.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 103 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
103	SJR	SR	Assess the ecological effects of low DO conditions in Suisun Marsh due to adding oxygen-depleted water from anthropogenic sources (from Water Quality Program Plan).		103 A. Status of the assessment of the ecological effects of low DO conditions in Suisun Marsh due to adding oxygen-depleted water from anthropogenic sources (from Water Quality Program Plan).											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 104 -- ROLLED UP SUMMARY

MILESTONE 104 -- Encourage regulatory activity to reduce discharge of oxygen reducing substances and nutrients by unpermitted dischargers. (from Phase II Report)		**PROJECTS REVIEWED -**		**SUMMARY --** At this time there are no funded projects or specific actions taken by ERP to encourage regulatory activities to address this milestone. However, the ERP staff works closely with the CVRWQCB who are taking steps under their authority (agricultural waiver and non-point source pollution and animal waste programs). There are likely other projects under different grant programs (Especially the recent SWRCB Prop 50 solicitations) that would contribute more directly to this milestone. Those projects were not addressed in this evaluation. See milestone 28, 46 and 75 for additional projects that address this milestone at a landscape level.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 104 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
104	SJR	SR	Encourage regulatory activity to reduce discharge of oxygen reducing substances and nutrients by unpermitted dischargers. (from Phase II Report)		104 A. Number of actions taken to encourage regulatory activities which reduce discharge of oxygen reducing substances and nutrients by nonpermitted dischargers. (from Phase II Report)											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 105 -- ROLLED UP SUMMARY

MILESTONE 105 -- Actions to reduce fine sediment loading to streams, especially Tuolumne, Merced, Stanislaus, Cosumnes, Napa, and Petaluma Rivers, and Sonoma Creek, due to human activities (from Phase II Report and Water Quality Program Plan): · Participate in implementation of USDA sediment reduction program. · Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites. · Implement stream restoration and revegetation work. · Quantify and determine ecological impacts of sediments in target watersheds, implement corrective actions.	**PROJECTS REVIEWED -** ERP-97-N21, ERP-98-B32, ERP-98-E09, ERP-00-E02, ERP-01-N09, ERP-01-N30, ERP-02-P36, AFRP-01-12, AFRP-02-02, AFRP-02-11		**SUMMARY --**Many projects have or will contribute to this milestone. These projects take steps (either through planning, education or restoration) to reduce erosion, sedimentation and fine sediment loading in several Sacramento Valley watersheds. At least 3 projects are located in key watersheds (Stanislaus, Tuolumne and Merced) with high importance for anadromous fish habitat. Salmon habitat and riparian forest was restored over a 2 mile area. The degree to which these projects participated in the USDA sediment reduction program is unclear from the available information. BMPs were used to achieve the objectives of reduced sediment loading. Projects from other fund sources and programs may also contribute to this milestone but were not evaluated. See milestones 29, 47, and 76 for additional projects that address this milestone at a landscape level.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 105 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
105	SJR	SR	Actions to reduce fine sediment loading to streams, especially Tuolumne, Merced, Stanislaus, Cosumnes, Napa, and Petaluma Rivers, and Sonoma Creek, due to human activities (from Phase II Report and Water Quality Program Plan): · Participate in implementation of USDA sediment reduction program. · Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites. · Implement stream restoration and revegetation work. · Quantify and determine ecological impacts of sediments in target watersheds, implement corrective actions.		105 A. Status of actions to reduce fine sediment loading to streams in the Tuolumne River due to human activities (from Phase II Report and Water Quality Program Plan):	ERP-97-N21	Sep-98	Sep-01	536,410	97,000	633,410	Carl Mesick Consultants	Carl Mesick		Knights Ferry Gravel Replenishment	Implement stream restoration work to reduce fine sediment loading to the Stanislaus River. Adding silt-free gravel should alleviate high concentrations of fine sediments through trapping and burial. ***Project completed. Multiphased project with several subsequent non-CALFED funded phases. J.D. Wikert, USFWS.***
105	SJR	SR			105 A. Status of actions to reduce fine sediment loading to streams in the Tuolumne River due to human activities (from Phase II Report and Water Quality Program Plan):	ERP-00-E02	Feb-01	Sep-04	868,600		868,600	Westside Resource Conservation District	Nettie Drake		Panoche/Silver Creek Watershed Management and Action Plan	This project will involve detailed technical evaluations of BMPs recommended in the Panoche/Silver Creek Watershed Assessment for managing erosion and reducing sediment and other contaminants delivered from the upper watershed during high flow events. ***Implementation project is 80% completed. Sarge Green, Westside RCD. (Note: As parsed, geographically this milestone does not allow for incorporation of this project, so while this project will not affect the Tuolumne River, it is affecting sediment loading in the greater westside San Joaquin Basin.)***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
105	SJR	SR			105 A. Status of actions to reduce fine sediment loading to streams in the Tuolumne River due to human activities (from Phase II Report and Water Quality Program Plan):	ERP-01-N30	Aug-01	Aug-04	573,810	287,901	861,711	Natural Resources Conservation Service	Eric Vinson		Digital Soil Survey Mapping and Digital Orthophotoquad Imagery Development	Five published Soil Survey Areas (East Stanislaus Area, Merced Area, Madera Area, Tehama County, Glenn County) in the Bay-Delta Region will be digitized, have SSURGO databases created, and have Digital Orthophotoquad (DOQ) imagery developed. ***Glenn Stanisewski, Natural Resources Conservation Service. Monitoring; 80% complete. Soils information can be used to address turbidity/ sedimentation in the Sacramento and San Joaquin Watersheds.***
105	SJR	SR			105 A. Status of actions to reduce fine sediment loading to streams in the Tuolumne River due to human activities (from Phase II Report and Water Quality Program Plan):	ERP-01-N09	Aug-04	Aug-04	910,468		910,468	Turlock Irrigation District	Wilton Fryer		Tuolumne River Fine Sediment Management	Actions to reduce fine sediment loading to Tuolumne River from the Gasburg Creek tributary. ***This is a planning, design and implementation project. Implementation has not started, yet the planning and design phases are completed. Project is 32% complete. Wilton Fryer, Turlock Irrigation District.***
105	SJR	SR			105 A. Status of actions to reduce fine sediment loading to streams in the Tuolumne River due to human activities (from Phase II Report and Water Quality Program Plan):	AFRP-02-11						AFRP	Jeff McLain		Partner with Modesto City and County Parks Departments for Restoration Planning and Implementation on the Gateway Parcel	***Objective: Incorporate habitat needs of salmonids in developing the updated Tuolumne River Regional Park Land Use and Master plans. Acquisition of the Gateway parcel located in the center of the regional park has necessitated the development of new land use and master plans for the park. The principal tasks involved in this planning effort include: (1) development of a preliminary program that broadly defines potential uses and activities within the Park corridor and a set of baseline environmental objectives; (2) soliciting public and agency comment in part by conducting interviews with key stakeholders and facilitating public workshops and meetings; (3) conducting reconnaissance-level field studies to document environmental setting and identify environmental opportunities and constraints; (4) prepare environmental documentation (EIR/EA); and (5) prepare Land Use Plan and Gateway Master Plan. This planning effort will affect a seven mile reach of the Tuolumne River that is used primarily as a migration corridor by fall-run Chinook salmon.***
105	SJR	SR			105B. Status of the sub element of actions to reducing fine sediment loading to the Tuolumne River: Participate in implementation of USDA sediment reduction program.	ERP-01-N09	Aug-04	Aug-04	910,468		910,468	Turlock Irrigation District	Wilton Fryer		Tuolumne River Fine Sediment Management	Actions to reduce fine sediment loading to Tuolumne River from the Gasburg Creek tributary. ***This is a planning, design and implementation project. Implementation has not started, yet the planning and design phases are completed. Project is 32% complete. Wilton Fryer, Turlock Irrigation District.***
105	SJR	SR			105B. Status of the sub element of actions to reducing fine sediment loading to the Tuolumne River: Participate in implementation of USDA sediment reduction program.	ERP-98-B32	Nov-98	Feb-99	28,000	0	28,000	Committee for Sustainable Agriculture	Cathy Holden		Environmental Agriculture Conferences and Field Tours	Provides educational conferences about environmentally sound agricultural practices that can be used by local growers, ranchers, dairies, agricultural advisors, and industrial related natural resources of the San Joaquin River and the Stanislaus, Merced and Tuolumne tributaries. ***Zea Sonnabend, Ecological Farming Association. Education; project completed.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
105	SJR	SR			105C Status of the sub element of actions to reducing fine sediment loading to the Tuolumne River: Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites.	AFRP-01-12		Aug-03				AFRP	Cesar Blanco USFWS		Tuolumne River watershed outreach and stewardship proposal	***Objective: To create and utilize outreach materials as tools to build awareness, understanding and support for the Tuolumne River Technical Advisory Committee Plan, "Habitat Restoration Plan for the Lower Tuolumne River Corridor". The cooperative agreement between the AFRP and TRPT was completed in October of 2001. TRPT released two documents: the Tuolumne River Watershed Map and the Lower Tuolumne River Corridor and Its Lands; a brochure depicting land use patterns in the Tuolumne River corridor. The TRPT received a no-cost time extension extending the end date to April 2003 to complete their outreach to landowners who might be interested in easement opportunities. TRPT submitted a final report in August 2003 documenting their outreach efforts. This report, along with the Tuolumne River Watershed Map and the Lower Tuolumne River Corridor and Its Lands can be found on the AFRP website.***
105	SJR	SR			105D. Status of the sub element of actions to reducing fine sediment loading to the Tuolumne River: Implementation of stream restoration and revegetation work.	AFRP-01-12		Aug-03				AFRP	Cesar Blanco USFWS		Tuolumne River watershed outreach and stewardship proposal	***Objective: To create and utilize outreach materials as tools to build awareness, understanding and support for the Tuolumne River Technical Advisory Committee Plan, "Habitat Restoration Plan for the Lower Tuolumne River Corridor". The cooperative agreement between the AFRP and TRPT was completed in October of 2001. TRPT released two documents: the Tuolumne River Watershed Map and the Lower Tuolumne River Corridor and Its Lands; a brochure depicting land use patterns in the Tuolumne River corridor. The TRPT received a no-cost time extension extending the end date to April 2003 to complete their outreach to landowners who might be interested in easement opportunities. TRPT submitted a final report in August 2003 documenting their outreach efforts. This report, along with the Tuolumne River Watershed Map and the Lower Tuolumne River Corridor and Its Lands can be found on the AFRP website.***
105	SJR	SR			105E. Status of the sub element of actions to reducing fine sediment loading to the Tuolumne River: Quantify and determine ecological impacts of sediments in target watersheds, implement corrective actions.	ERP-02-P36	Jun-03	Jun-06	1,402,159	0	1,402,159	University of California, Davis - Agronomy and Range Science	Dr. Steve Temple		The Ecological and Economic Costs and Benefits of Alternative Agricultural Practices: Sediment, Nutrient, and Pesticides in Runoff from Conservation Tillage and Cover Cropped Systems	The primary goal of this project is to quantify the ecological and economic costs and benefits of alternative agricultural practices in irrigated row cropping systems, at the farm and societal levels. ***Project not completed. This project will determine the impacts of reduced runoffs; hopes to decrease soil organic carbon, measure sediments and pesticides, and conduct analysis of water quality. Steve Temple, UC Davis.***
105	SJR	SR			105 F. Status of actions to reduce fine sediment loading to streams in the Merced River due to human activities (from Phase II Report and Water Quality Program Plan):	ERP-98-E09	Sep-98	Apr-01	300,000	26,552	326,552	Stillwater Sciences & Merced Co. Planning and Development	Jennifer Vick/Bob Smith		Merced River Corridor Restoration Plan	Project will identify major sources of fine sediment and assess the effects of fine sediment on ecosystem processes and habitat quality. *Project will address historical and current supply and transport of coarse and fine sediment.* ***Jeff McLain, Planning. Final Plan completed. The final plan recommends actions to re-establish floodplain at elevations that are functional under the contemporary regulated flow regime, to establish a floodplain corridor and reconnect the river to its floodplain.***
105	SJR	SR			105G. Status of the sub element of actions to reducing fine sediment loading to the Merced River: Participate in implementation of USDA sediment reduction program.	ERP-98-B32	Nov-98	Feb-99	28,000	0	28,000	Committee for Sustainable Agriculture	Cathy Holden		Environmental Agriculture Conferences and Field Tours	Provides educational conferences about environmentally sound agricultural practices that can be used by local growers, ranchers, dairies, agricultural advisors, and industrial related natural resources of the San Joaquin River and the Stanislaus, Merced and Tuolumne tributaries. ***Project completed. Zea Sonnabend, Ecological Farming Association.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
105	SJR	SR			105H Status of the sub element of actions to reducing fine sediment loading to the Merced River: Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites.											
105	SJR	SR			105I. Status of the sub element of actions to reducing fine sediment loading to the Merced River: Implementation of stream restoration and revegetation work.											
105	SJR	SR			105J. Status of the sub element of actions to reducing fine sediment loading to the Merced River: Quantify and determine ecological impacts of sediments in target watersheds, implement corrective actions.	ERP-02-P36	Jun-03	Jun-06	1,402,159	0	1,402,159	University of California, Davis - Agronomy and Range Science	Dr. Steve Temple		The Ecological and Economic Costs and Benefits of Alternative Agricultural Practices: Sediment, Nutrient, and Pesticides in Runoff from Conservation Tillage and Cover Cropped Systems	The primary goal of this project is to quantify the ecological and economic costs and benefits of alternative agricultural practices in irrigated row cropping systems, at the farm and societal levels. ***Project not completed. This project will determine the impacts of reduced runoffs; hopes to decrease soil organic carbon, measure sediments and pesticides, and conduct analysis of water quality. Steve Temple, UC Davis.***
105	SJR	SR			105 K. Status of actions to reduce fine sediment loading to streams in the Stanislaus River due to human activities (from Phase II Report and Water Quality Program Plan):	AFRP-02-02						AFRP	JD Wikert		Develop a Concensus Based Plan to Direct the Long Term Implementation of Prioritized Restoration/Research in the Stanislaus River Below Goodwin Dam	***Objective: Develop a consensus based plan to direct the long term implementation of prioritized restoration/research in the Stanislaus River below Goodwin Dam. The project is currently focussed on finishing a summary of the existing fisheries data. The summary will be provided to the Stanislaus River Fish Group for review and comment in January 2004. Work continues on the Restoration Plan and conceptual model.***
105	SJR	SR			105L. Status of the sub element of actions to reducing fine sediment loading to the Stanislaus River: Participate in implementation of USDA sediment reduction program.	ERP-98-B32	Nov-98	Feb-99	28,000	0	28,000	Committee for Sustainable Agriculture	Cathy Holden		Environmental Agriculture Conferences and Field Tours	Provides educational conferences about environmentally sound agricultural practices that can be used by local growers, ranchers, dairies, agricultural advisors, and industrial related natural resources of the San Joaquin River and the Stanislaus, Merced and Tuolumne tributaries. ***Project completed. Zea Sonnabend, Ecological Farming Association.***
105	SJR	SR			105L. Status of the sub element of actions to reducing fine sediment loading to the Stanislaus River: Participate in implementation of USDA sediment reduction program.	AFRP-02-02						AFRP	JD Wikert		Develop a Concensus Based Plan to Direct the Long Term Implementation of Prioritized Restoration/Research in the Stanislaus River Below Goodwin Dam	***Objective: Develop a consensus based plan to direct the long term implementation of prioritized restoration/research in the Stanislaus River below Goodwin Dam. The project is currently focussed on finishing a summary of the existing fisheries data. The summary will be provided to the Stanislaus River Fish Group for review and comment in January 2004. Work continues on the Restoration Plan and conceptual model.***
105	SJR	SR			105M Status of the sub element of actions to reducing fine sediment loading to the Stanislaus River: Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites.	AFRP-02-02						AFRP	JD Wikert		Develop a Concensus Based Plan to Direct the Long Term Implementation of Prioritized Restoration/Research in the Stanislaus River Below Goodwin Dam	***Objective: Develop a consensus based plan to direct the long term implementation of prioritized restoration/research in the Stanislaus River below Goodwin Dam. The project is currently focussed on finishing a summary of the existing fisheries data. The summary will be provided to the Stanislaus River Fish Group for review and comment in January 2004. Work continues on the Restoration Plan and conceptual model.***
105	SJR	SR			105N. Status of the sub element of actions to reducing fine sediment loading to the Stanislaus River: Implementation of stream restoration and revegetation work.	AFRP-02-02						AFRP	JD Wikert		Develop a Concensus Based Plan to Direct the Long Term Implementation of Prioritized Restoration/Research in the Stanislaus River Below Goodwin Dam	***Objective: Develop a consensus based plan to direct the long term implementation of prioritized restoration/research in the Stanislaus River below Goodwin Dam. The project is currently focussed on finishing a summary of the existing fisheries data. The summary will be provided to the Stanislaus River Fish Group for review and comment in January 2004. Work continues on the Restoration Plan and conceptual model.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
105	SJR	SR			105O. Status of the sub element of actions to reducing fine sediment loading to the Stanislaus River: Quantify and determine ecological impacts of sediments in target watersheds, implement corrective actions.	ERP-02-P36	Jun-03	Jun-06	1,402,159	0	1,402,159	University of California, Davis - Agronomy and Range Science	Dr. Steve Temple		The Ecological and Economic Costs and Benefits of Alternative Agricultural Practices: Sediment, Nutrient, and Pesticides in Runoff from Conservation Tillage and Cover Cropped Systems	The primary goal of this project is to quantify the ecological and economic costs and benefits of alternative agricultural practices in irrigated row cropping systems, at the farm and societal levels. ***Project not completed. This project will determine the impacts of reduced runoffs; hopes to decrease soil organic carbon, measure sediments and pesticides, and conduct analysis of water quality. Steve Temple, UC Davis.***
105	SJR	SR			105O. Status of the sub element of actions to reducing fine sediment loading to the Stanislaus River: Quantify and determine ecological impacts of sediments in target watersheds, implement corrective actions.	AFRP-02-02						AFRP	JD Wikert		Develop a Concensus Based Plan to Direct the Long Term Implementation of Prioritized Restoration/Research in the Stanislaus River Below Goodwin Dam	***Objective: Develop a consensus based plan to direct the long term implementation of prioritized restoration/research in the Stanislaus River below Goodwin Dam. The project is currently focussed on finishing a summary of the existing fisheries data. The summary will be provided to the Stanislaus River Fish Group for review and comment in January 2004. Work continues on the Restoration Plan and conceptual model.***
105	SJR	SR			105P. Status of actions to reduce fine sediment loading to streams in the Cosumnes River due to human activities (from Phase II Report and Water Quality Program Plan):											
105	SJR	SR			105Q. Status of the sub element of actions to reducing fine sediment loading to the Cosumnes River: Participate in implementation of USDA sediment reduction program.											
105	SJR	SR			105R Status of the sub element of actions to reducing fine sediment loading to the Cosumnes River: Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites.											
105	SJR	SR			105S. Status of the sub element of actions to reducing fine sediment loading to the Cosumnes River: Implementation of stream restoration and revegetation work.											
105	SJR	SR			105T. Status of the sub element of actions to reducing fine sediment loading to the Cosumnes River: Quantify and determine ecological impacts of sediments in target watersheds, implement corrective actions.	ERP-02-P36	Jun-03	Jun-06	1,402,159	0	1,402,159	University of California, Davis - Agronomy and Range Science	Dr. Steve Temple		The Ecological and Economic Costs and Benefits of Alternative Agricultural Practices: Sediment, Nutrient, and Pesticides in Runoff from Conservation Tillage and Cover Cropped Systems	The primary goal of this project is to quantify the ecological and economic costs and benefits of alternative agricultural practices in irrigated row cropping systems, at the farm and societal levels. ***Project not completed. This project will determine the impacts of reduced runoffs; hopes to decrease soil organic carbon, measure sediments and pesticides, and conduct analysis of water quality. Steve Temple, UC Davis.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
105	SJR	SR			105U. Status of actions to reduce fine sediment loading to streams in the Napa River due to human activities (from Phase II Report and Water Quality Program Plan):											
105	SJR	SR			105V. Status of the sub element of actions to reducing fine sediment loading to the Napa River: Participate in implementation of USDA sediment reduction program.											
105	SJR	SR			105W Status of the sub element of actions to reducing fine sediment loading to the Napa River: Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites.											
105	SJR	SR			105X. Status of the sub element of actions to reducing fine sediment loading to the Napa River: Implementation of stream restoration and revegetation work.											
105	SJR	SR			105Y. Status of the sub element of actions to reducing fine sediment loading to the Napa River: Quantify and determine ecological impacts of sediments in target watersheds, implement corrective actions.											
105	SJR	SR			105Z. Status of actions to reduce fine sediment loading to streams in the Petaluma River due to human activities (from Phase II Report and Water Quality Program Plan):											
105	SJR	SR			105AA. Status of the sub element of actions to reducing fine sediment loading to the Petaluma River: Participate in implementation of USDA sediment reduction program.											
105	SJR	SR			105BB Status of the sub element of actions to reducing fine sediment loading to the Petaluma River: Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites.											

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT		CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
							START DATE	END DATE								
105	SJR	SR			105CC. Status of the sub element of actions to reducing fine sediment loading to the Petaluma River: Implementation of stream restoration and revegetation work.											
105	SJR	SR			105DD. Status of the sub element of actions to reducing fine sediment loading to the Petaluma River: Quantify and determine ecological impacts of sediments in target watersheds, implement corrective actions.											
105	SJR	SR			105EE. Status of the sub element of actions to reducing fine sediment loading to the Sonoma Creek: Participate in implementation of USDA sediment reduction program.											
105	SJR	SR			105FF Status of the sub element of actions to reducing fine sediment loading to the Sonoma Creek: Implement sediment reduction BMPs in construction areas, on agricultural lands, for urban storm water runoff, and other specific sites.											
105	SJR	SR			105GG. Status of the sub element of actions to reducing fine sediment loading to the Sonoma Creek: Implementation of stream restoration and revegetation work.											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 106 -- ROLLED UP SUMMARY

MILESTONE 106 -- Conduct the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed.		**PROJECTS REVIEWED -** ERP-97-C05, ERP-99-B06, ERP-02-C06A, ERP-02-C06B, ERP-02D-C12, ERP-02D-P62, ERP-02-P12D, ERP-02-P40		**SUMMARY --** This milestone should be reworded. Previous research has shown that there are many factors that affect mercury methylation and bioaccumulations, and we cannot set an "effects threshold" for mercury concentration in sediments, without consideration of the other factors. However, ERP has made substantial investments for research projects to understand mercury sources, transformations, and factors controlling the methylation/demethylation and bioaccumulation processes. Two studies have been completed, and four more studies are just beginning that will evaluate sources, processes and effects. However, at this time there are still significant knowledge gaps in understanding mercury transformations, bioaccumulation and effects to fish and wildlife. The mercury strategy also provides additional information on what is known, and a framework for future investigations to investigate this issue. See milestones 30, 48, and 77 for additional projects that address this milestone at a landscape level.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 106 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
106	SJR	SR	Conduct the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed.		106 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific watershed	ERP-99-B06	Sep-00	Sep-03	4,062,058		4,062,058	San Jose State University Foundation - Moss Landing Marine Lab	Kenneth Coale		CALFED Mercury Project: An Assessment of Ecological and Human Health Impacts of Mercury in the San Francisco Bay – Sacramento – San Joaquin Delta Watershed (California)	***This large multifaceted research project investigated sources and cycling of mercury, including bioaccumulation and effects on avian populations. The in-depth study of sources was focused on the Sacramento River, Cache Creek and the Delta, but the biogeochemical cycling component applies to all regions. This milestone is difficult to achieve because mercury sediment concentrations are not well correlated with affects, and there are many other factors that influence methylation, exposure, bioaccumulation and effects. The results from this project made significant gains in understanding mercury sources and cycling, but there are still many critical unknown processes that are not understood. More studies are needed to understand effects on fish and wildlife, methylation/demethylation processes and the factors that influence rates, controllable sources of mercury, bioaccumulation and trophic transfer.***
106	SJR	SR			106 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific watershed	ERP-02D-C12			5,337,012		5,337,012	U.S. Fish and Wildlife Service	Tom Suchanek		Mercury in San Francisco Bay-Delta Birds: Trophic Pathways, Bioaccumulation and Ecotoxicological Risk to Avian Reproduction	***NO CONTRACT STILL UNDER DEVELOPMENT. This is a very comprehensive study to determine expsoure pathways and effects of mercury exposure and bioaccumulation in 3 bird guilds in the Bay-Delta. The guilds include: terns, diving ducks and recurvirostrids. The project includes both field and lab studies, reproductive effects, dietary exposure and bioaccumulation, and histopathological effects in bird populations.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
106	SJR	SR			106 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific □□□□□□□□□□	ERP-02D-P62			1,656,569		1,656,569	San Francisco Bay Institute	Donald Yee		Mercury and Methylmercury Processes in North San Francisco Bay Tidal Wetland Ecosystems	***NO CONTRACT STILL UNDER DEVELOPMENT. This project will examine mercury and methylmercury concentrations in the sediments, water and biota of five tidal marshes along a salinity gradient up the Petaluma River. The study will investigate how environmental variables affect methylmercury production and bioaccumulation, including age of marsh and salinity, and assess seasonal and interannual variation. The project will also investigate potential effects to Virginia Rail and Clapper Rail populations in these marshes. The process-oriented investigations are applicable to other watersheds.***
106	SJR	SR			106 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific □□□□□□□□□□	ERP-02-P40	Jul-03	Jun-06	2,262,567		2,262,567	U.S. Geological Survey	Mark Marvin-DiPasquale		Evaluation of Mercury Transformations and Trophic Transfer in the San Francisco Bay Delta: Identifying Critical Processes for Ecosystem Restoration Program	***This research project conducts investigations to understand mercury bioavailability in two different Delta locations and the processes and factors that control it, including bioaccumulation in the food chain. Understanding of processes applies to other regions as well.***
106	SJR	SR			106 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific □□□□□□□□□□	ERP-97-C05	Jul-98	Sep 98?	546,171		546,171	University of California, Davis	Darell Slotton		The Effects of Wetland Restoration on the Production of Methyl Mercury in the San Francisco Bay Delta System	***This research project looks at methylmercury production and exposure in wetland environments, which are found in all regions. This project found elevated methylmercury in the water column and biota of wetlands, compared to adjacent channels. More studies are needed to determine methylation / demethylation and exposure in different types of wetlands and other habitats, to determine if there are controllable factors that can reduce methylation rates and exposure.***
106	SJR	SR			106 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific □□□□□□□□□□	ERP-02-C06-A	Apr-03	Mar-06	2,668,091		2,668,091	Dept. of Fish and Game; San Jose State University Foundation	Mark Stephenson, Chris Thompson		Transport, Cycling and Fate of Mercury and Monomethyl Mercury in the San Francisco Delta and Tributaries - An Integrated Mass Balance Assessment Approach- Prop 204 funded	***This research projects have a number of investigations to understand mercury bioavailability in different sediment environments and the processes and factors that control it.***
106	SJR	SR			106 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific	ERP-02-P12-D	May-03	Apr-06	2,192,515		2,192,515	Stillwater Sciences	Dr. Peter Downs		Merced River Corridor Restoration Plan Phase IV: Dredger Tailings Reach	Fish and benthic invertebrates will be collected to assess mercury uptake within the local food web. ***Jeff McLain, USFWS. Planning.***
106	SJR	SR			106 A. Status of the necessary research to determine no adverse ecological/biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta estuary and its watershed. (Work specific to a key organism in a specific	ERP-02-C06-B			1,213,121		1,213,121	Dept. of Fish and Game; San Jose State University Foundation	Mark Stephenson, Chris Thompson		Transport, Cycling and Fate of Mercury and Monomethyl Mercury in the San Francisco Delta and Tributaries - An Integrated Mass Balance Assessment Approach- Prop 13 funded	***Conduct the necessary research to determine no adverse ecological / biological effects threshold concentrations for mercury in sediments and key organisms in the Bay-Delta and its watershed. This research projects have a number of investigations to understand mercury bioavailability in different sediment environments and the processes and factors that control it.***

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 107 -- ROLLED UP SUMMARY

MILESTONE 107 -- Conduct the following pesticide work (from Phase II Report): · Develop diazinon and chlorpyrifos hazard assessment criteria with CDFG and the Department of Pesticide Regulations. · Support development and implementation of a TMDL for diazinon. · Develop BMPs for dormant spray and household uses. · Determine the ecological significance of pesticide discharges. · Support implementation of BMPs. · Monitor to determine effectiveness of BMPs	**PROJECTS REVIEWED -** ERP-95-M06, ERP-97-C12, ERP-97-N20, ERP-98-C06, ERP-99-B14, ERP-02-P36		**SUMMARY --** One project has been completed to develop the diazinon and chlorpyrifos hazard assessment criteria for toxicity. One project has been completed to support the development and implantation of a TMDL for diazinon, to assess and reduce diazinon inputs from urban stormwater runoff in Sacramento County. Three projects have been funded to evaluate and implement pesticide reduction practices for both urban stormwater and agriculture. Three projects have been funded to evaluate effects of pesticides on aquatic life. One project that developed BMPs for pesticide reductions in agriculture also monitored for effectiveness of various techniques. Recent results from studies indicate that pyrethroids are causing significant toxicity to benthic organisms in 25-60% of the waterbodies tested (particularly creeks and drainages). Other studies have also shown that very low concentrations of organophosphate pesticides may interfere with sensory cues needed for salmonid migration. Lab studies of salmon with sublethal exposures to pyrethroids showed significant increased susceptibility to mortality from	SUMMARY continued -- disease. More investigations are needed to evaluate episodes of both water and sediment toxicity from pesticides, including pyrethroids, as well as potential effects from sublethal exposures that may affect aquatic populations. There are significant efforts by other organizations to address pesticide issues, including the ag drainage program and TMDL development at the Regional Board, PRIZM grants from USEPA, and other efforts by USDA and local groups to reduce pesticide usage and impacts from pesticides. Also see milestones 33, 49, and 80.	**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 107 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
107	SJR	SR	Conduct the following pesticide work (from Phase II Report): · Develop diazinon and chlorpyrifos hazard assessment criteria with CDFG and the Department of Pesticide Regulations. · Support development and implementation of a TMDL for diazinon. · Develop BMPs for dormant spray and household uses. · Determine the ecological significance of pesticide discharges. · Support implementation of BMPs. · Monitor to determine effectiveness of BMPs		107 A. Status of the development of diazinon and chlorpyrifos hazard assessment criteria with CDFG and the Department of Pesticide Regulations.	ERP-99-B14	Aug-99	Sep-04	460,000			Sustainable Cotton Project	Will Allen		Sustainable Cotton Project BASIC - Pesticides in San Joaquin	Task 3 of the grant is to document changes in biodiversity, volumes of chemical release, and economic performance as a result of BASIC MPs. The grant is to reduce insecticide and miticide use by 80% (including chlorpyrifos) and reduce synthetic fertilizer by 50%. This grant appears to lead towards contributing towards the assessment but it is not real clear. ***Marcia Gibbs, Community Alliance with Family Farmers (CAFF). Implementation. During 2000 and 2001, BASIC cotton growers used 50% and 65% less targeted pesticides, respectively, than nearby conventionally managed fields. These targeted pesticides include 15 active ingredients. In 2002, BASIC move to a new geographic area with 23 growers who farm more than 15,000 acres of cotton; growers reduced 'targeted pesticide' application rates by 73% on enrolled acreage, compared to the county average; BASIC growers reduced 'targeted pesticide' application rates by 50% on all cotton acreage they farmed, compared to the county average. Project completed.***
107	SJR	SR			107 A. Status of the development of diazinon and chlorpyrifos hazard assessment criteria with CDFG and the Department of Pesticide Regulations.	ERP-98-C06	Aug-98	Jun-99	67,753	0	67,753	CDFG	Brian Finlayson		Water Quality Criteria for Cloropyrifos and Diazinon	Develop hazard assessment criteria for diazinon and cloropyrifos with DFG and Dept. of Pesticide and Regulation. ***Project completed. DFG tested for cloropyrifos and diazinon in the Sacramento and San Joaquin Delta. Criteria was re-calculated as per Cal-Fed specs. Final report was written. Brian Finlayson, CDFG.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
107	SJR	SR			107 B. Status of actions taken in support of development and implementation of a TMDL for diazinon.	ERP-97-N20	Jul-98	Jun-01	1,680,631	none	1,680,631	Community Alliance with Family Farmers	Judith Redmond		Implementing Program to Reduce the Use of Pesticides and Fertilizers in the Sacramento and San Joaquin Watersheds	The project objectives: 1) Plan and implement and intensive media campaign to enlist mainstream farmers in CAFF's pesticide reduction programs; 2) Continue to coordinate BIOS in San Joaquin, Madera and Colusa Communities through the 1999 growing season; 3) Oversee the transition of BIOS projects to local leadership starting in the fall of 1999; 4) Use the Lighthouse Farm Network to offer consistent technical support to farmers. ***Marcia Gibbs,Community Alliance with Family Farmers (CAFF). Implementation; project completed. Addresses pesticide reduction and water quality. The primary stressor addressed by the project was water quality from agricultural, non-point source contaminants and increased nutrient inputs. The project reduced the use of pesticides that have been shown to degrade water quality. Farmers that enroll in BIOS have been shown to cut by 90% their use of diazinon. The project also decreased the use of other organophosphate insecticides.***
107	SJR	SR			107 B. Status of actions taken in support of development and implementation of a TMDL for diazinon.	ERP99-B14	Aug-99	Sep-04	460,000		460,000	Sustainable Cotton Project	Will Allen		Sustainable Cotton Project BASIC - Pesticides in San Joaquin	Task 3 of the grant is to document changes in biodiversity, volumes of chemical release, and economic performance as a result of BASIC MPs. The grant is to reduce insecticide and miticide use by 80% (including chloropyifos) and reduce synthetic fertilizer by 50%. ***Marcia Gibbs,Community Alliance with Family Farmers (CAFF). Implementation. During 2000 and 2001, BASIC cotton growers used 50% and 65% less targeted pesticides, respectively, than nearby conventionally managed fields. In 2002, BASIC move to a new geographic area with 23 growers who farm more than 15,000 acres of cotton; growers reduced 'targeted pesticide' application rates by 73% on enrolled acreage, compared to the county average; BASIC growers reduced 'targeted pesticide' application rates by 50% on all cotton acreage they farmed, compared to the county average. Project completed.***
107	SJR	SR			107 C. Status of the development of BMPs for dormant spray and household uses.	ERP-97-C12	Aug-98	Jul-01	957,781	0	957,781	UC Davis	Frank Zalom		Evaluation of Alternative Pesticide Use Reduction Practices	The project is designed to identify, promote, and monitor alternative practices to reduce biological impacts of pesticides on the water quality of all priority aquatic habitats identified by CALFED. ***E-room final report. Research; project completed.***
107	SJR	SR			107 D. Status of determining the ecological significance of pesticide discharges.	ERP-97-C12	Aug-98	Jul-01	957,781	0	957,781	UC Davis	Frank Zalom		Evaluation of Alternative Pesticide Use Reduction Practices	The project is designed to identify, promote, and monitor alternative practices to reduce biological impacts of pesticides on the water quality of all priority aquatic habitats identified by CALFED. ***E-room final report. Research; project completed.***
107	SJR	SR			107 D. Status of determining the ecological significance of pesticide discharges.	ERP-02-P36	Jun-03	Jun-06	1,402,159	0	1,402,159	University of California, Davis - Agronomy and Range Science	Dr. Steve Temple		The Ecological and Economic Costs and Benefits of Alternative Agricultural Practices: Sediment, Nutrient, and Pesticides in Runoff from Conservation Tillage and Cover Cropped Systems	The primary goal of this project is to quantify the ecological and economic costs and benefits of alternative agricultural practices in irrigated row cropping systems, at the farm and societal levels. ***Project not completed. This project will determine the impacts of reduced runoffs; hopes to decrease soil organic carbon, measure sediments and pesticides, and conduct analysis of water quality. Steve Temple, UC Davis.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
107	SJR	SR			107 E. Status of actions taken in support of implementation of BMPs.	ERP-95-M06	Oct-95		660,000	0	660,000	Community Alliance with Family Farmers, Foundation	Jill Klein		Biological Integrated Orchard System Almond Expansion Project	Biologically Integrated Orchard System (BIOS) is a three-year project providing for the transfer of information and technology regarding pollution prevention by eliminating diazinon and reducing other pesticides used in the production of California almonds. ***Demonstration Project completed. In 1998, BIOS almond growers managed a total of 33,820 acres, representing ~ 5% of the bearing and non-bearing almond acreage in California. In 1997, 17% of the total acreage managed by BIOS growers was managed using BIOS practices, ~ fourfold increase. In 1996, 72 participating almond and walnut growers participated in the BIOS program. In 1998, the number of participants increased to 106. The number of BIOS growers who reported using Bacillus thuringiensis (Bt), increased form 33% in 1997 to 60% in 1998. Bt is a safe, selective, biological pesticide and an effective alternative to organophosphates. Marcia Gibbs,Community Alliance with Family Farmers (CAFF).***
107	SJR	SR			107 E. Status of actions taken in support of implementation of BMPs.	ERP-97-C12	Aug-98	Jul-01	957,781	0	957,781	UC Davis	Frank Zalom		Evaluation of Alternative Pesticide Use Reduction Practices	The project is designed to identify, promote, and monitor alternative practices to reduce biological impacts of pesticides on the water quality of all priority aquatic habitats identified by CALFED. ***E-room final report. Research; project completed.***
107	SJR	SR			107 F. Status of monitoring program to determine effectiveness of BMPs	ERP-95-M06	Oct-95		660,000	0	660,000	Community Alliance with Family Farmers, Foundation	Jill Klein		Biological Integrated Orchard System Almond Expansion Project	Biologically Integrated Orchard System (BIOS) is a three-year project providing for the transfer of information and technology regarding pollution prevention by eliminating diazinon and reducing other pesticides used in the production of California almonds. ***Demonstration Project completed. In 1998, BIOS almond growers managed a total of 33,820 acres, representing ~ 5% of the bearing and non-bearing almond acreage in California. In 1997, 17% of the total acreage managed by BIOS growers was managed using BIOS practices, ~ fourfold increase. In 1996, 72 participating almond and walnut growers participated in the BIOS program. In 1998, the number of participants increased to 106. The number of BIOS growers who reported using Bacillus thuringiensis (Bt), increased form 33% in 1997 to 60% in 1998. Bt is a safe, selective, biological pesticide and an effective alternative to organophosphates. Marcia Gibbs,Community Alliance with Family Farmers (CAFF).***
107	SJR	SR			107 F. Status of monitoring program to determine effectiveness of BMPs	ERP-97-C12	Aug-98	Jul-01	957,781	0	957,781	UC Davis	Frank Zalom		Evaluation of Alternative Pesticide Use Reduction Practices	The project is designed to identify, promote, and monitor alternative practices to reduce biological impacts of pesticides on the water quality of all priority aquatic habitats identified by CALFED. ***E-room final report. Research; project completed.***

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 108 -- ROLLED UP SUMMARY

MILESTONE 108 -- Conduct the following selenium work: · Conduct selenium research to fill data gaps in order to refine regulatory goals of source control actions; determine bioavailability of selenium under several scenarios (from Phase II Report). · Evaluate and, if appropriate, implement real-time management of selenium discharges (from Phase II Report). · Expand and implement source control, treatment, and reuse programs (from Phase II Report). · Coordinate with other programs; e.g., recommendations of San Joaquin Valley Drainage Implementation Program, CVPIA for retirement of lands with drainage problems that are not subject to correction in other ways (from Phase II Report). · Support development and implementation of TMDL for selenium in the San Joaquin River watershed (focus on Grassland area).	**PROJECTS REVIEWED -** ERP-98-B07, ERP-98-B14, ERP-00-E02, ERP-02-P35, ERP-02-P44		**SUMMARY --** Selenium sources in the watershed include irrigation return water, runoff and groundwater inputs from naturally occurring soil selenium in the San Joaquin Valley and from refineries in the San Francisco Bay. Two projects have been funded to evaluate sources, fate and transport, bioaccumulation and ecological effects of selenium in the aquatic ecosystem. Three of these projects have been funded to develop treatment feasibility studies and treatment technologies to reduce selenium and salinity inputs in the San Joaquin River watershed. Two additional projects were funded to support the planning, development and operation of a real-time water quality management program. The ERP has provided grant funds directly to SJVDIP (BCP process) to improve coordination of agricultural drainage issues in the SJR. ERP and DWQP staffs coordinate with the RWQCB on TMDL issues for salinity (affects selenium) in the SJR. See other milestones (34 and 108) for additional projects that address this milestone at a landscape level and milestone 50 which is focused within the San Francisco Bay.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 108 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
108	SJR	SR	Conduct the following selenium work: · Conduct selenium research to fill data gaps in order to refine regulatory goals of source control actions; determine bioavailability of selenium under several scenarios (from Phase II Report). · Evaluate and, if appropriate, implement real-time management of selenium discharges (from Phase II Report). · Expand and implement source control treatment, and reuse programs (from Phase II Report). · Coordinate with other programs; e.g., recommendations of San Joaquin Valley Drainage Implementation Program, CVPIA for retirement of lands with drainage problems that are not subject to correction in other ways (from Phase II Report). · Support development and implementation of TMDL for selenium in the San Joaquin River watershed (focus on Grassland area).		108 A. Status of selenium research to fill data gaps in order to refine regulatory goals of source control actions; determine bioavailability of selenium under several scenarios (from Phase II Report).	ERP-98-B07	Aug-98	Dec-01	1,589,000	0	1,589,000	U.S. Geological Survey	Samuel Luoma		Assessment of the Impacts of Selenium on Restoration of the San Francisco Bay-Delta Ecosystem	PORTION OF MILESTONE ADDRESSED: Resolve knowledge gaps and use models and monitoring to aid management of Se controversies that might impede the ecosystem restoration process. ***Samuel Luoma, U.S. Geological Survey. Monitoring/Research. Project completed.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
	SJR	SR			108 A. Status of selenium research to fill data gaps in order to refine regulatory goals of source control actions; determine bioavailability of selenium under several scenarios (from Phase II Report).	ERP-98-B14	Sep-98	Sep-02	1,149,000	None	1,149,000	UC Berkeley	William J. Oswald		Irrigation Drainage Water Treatment for Selenium Removal: Panoche Drainage District Demonstration Facility	The project will provide the studies needed to improve and optimize selenium removal at the lowest possible cost. With the wide-spread implementation of the Algal-Bacterial Selenium Removal (ABSR) technology in the western San Joaquin Valley, the loading of selenium to the San Joaquin River and the Delta would be substantially reduced lowering the potential for toxic impacts upon wildlife. ***Tryg J. Lundquist, UC Berkeley. Implementation project completed. Demonstration project for the treatment of wastewater to reduce selenium and nitrogen. The pilot project was a successful scale up of a laboratory conceptual model for reducing selenium and nitrogen found in agricultural drainage water. It continues to function and provide further research information in regards to treatment of agricultural drainage water.***
	SJR	SR			108 A. Status of selenium research to fill data gaps in order to refine regulatory goals of source control actions; determine bioavailability of selenium under several scenarios (from Phase II Report).	ERP-02-P35	Jul-03	Jun-04	150,047		150,047	The Regents of the University of California	Ahmad Hakim-Elahi		Selenium Effects on Health and Reproduction of White Sturgeon, Acipenser transmontanus, in the Sacramento-San Joaquin Estuary	This project will conduct research relating to the bioavailability of selenium in the Delta and Bay and San Joaquin River. ***Research project not complete, has received an extension. Serge Doroshov, UC Davis.***
108	SJR	SR			108 B. Status of the evaluation and, if appropriate, implementation a of real-time management of selenium discharges (from Phase II Report).											
	SJR	SR			108 D. Status of expansion and implementation of selenium source control, treatment, and reuse programs (from Phase II Report).	ERP-98-B14	Sep-98	Sep-02	1,149,000	0	1,149,000	UC Berkeley	William J. Oswald		Irrigation Drainage Water Treatment for Selenium Removal: Panoche Drainage District Demonstration Facility	The project will provide the studies needed to improve and optimize selenium removal at the lowest possible cost. With the wide-spread implementation of the Algal-Bacterial Selenium Removal (ABSR) technology in the western San Joaquin Valley, the loading of selenium to the San Joaquin River and the Delta would be substantially reduced lowering the potential for toxic impacts upon wildlife. ***Tryg J. Lundquist,UC Berkeley. Implementation project completed. Demonstration project for the treatment of wastewater to reduce selenium and nitrogen. The pilot project was a successful scale up of a laboratory conceptual model for reducing selenium and nitrogen found in agricultural drainage water. It continues to function and provide further research information in regards to treatment of agricultural drainage water.***
108	SJR	SR			108 D. Status of expansion and implementation of selenium source control, treatment, and reuse programs (from Phase II Report).	ERP-00-E02	Feb-01	Sep-04	868,600		868,600	Westside Resource Conservation District	Nettie Drake		Panoche/Silver Creek Watershed Management and Action Plan	This project will involve detailed technical evaluations of BMPs recommended in the Panoche/Silver Creek Watershed Assessment for managing erosion and reducing sediment and other contaminants delivered from the upper watershed during high flow events. This project will perform technical analysis on selenium sources.***Implementation project is 80% completed. Sarge Green, Westside RCD.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
	SJR	SR			108 D. Status of expansion and implementation of selenium source control, treatment, and reuse programs (from Phase II Report).	ERP-02-P44	Jul-03	Jun-04	280,890		280,890	Water Tech Partners	Ronald Enzweiler		Full Scale Demonstration of Agricultural Water Recycling Process Using Membrane Technology	The overall goal of this three-phased project is to demonstrate the technical and economic feasibility of operating a zero-discharge on farm drainage water recycling process in an environmentally sound manner. The treatment technology tested during this phase of the project will support the reduction of selenium, boron, and other constituents of concern in drainage water that otherwise flows into the SJR in this Region. ***Research project not completed. Ronald Enzweiler, Water Tech Partners.***
108	SJR	SR			108 E Status of coordination with other selenium programs; e.g., recommendations of San Joaquin Valley Drainage Implementation Program, CVPIA for retirement of lands with drainage problems that are not subject to correction in other ways (from Phase II Report).											
108	SJR	SR			108 F· Status of actions to support development and implementation of TMDL for selenium in the San Joaquin River watershed (focus on Grassland area).											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 109 -- ROLLED UP SUMMARY

MILESTONE 109 -- Conduct the following actions in reduce organochlorine pesticide inputs to streams (from Phase II Report): · Participate in implementation of USDA sediment reduction program. · Implement sediment reduction BMPs on agricultural lands and other specific sites. · Implement BMPs for urban/industrial storm water runoff and discharges to reduce PCB and organochlorine pesticides.		**PROJECTS REVIEWED -** ERP-95-M06, ERP-97-N20, ERP-02-P36		**SUMMARY --** Organochlorine pesticides are no longer used in this watershed. However, they are extremely persistent and tend to bind strongly to the sediment. Therefore, efforts to reduce sediment inputs will also reduce inputs of organochlorine pesticides. Since organochlorine pesticides are no longer in use the projects most likely to affect this milestone are those that advocate and apply management practices that control runoff and sediment. The contribution of some of the listed projects to this milestone is indirect for that reason. See milestones 35, 51 and 81 for additional projects that address this milestone at a landscape level.			**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 109 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
109	SJR	SR	Conduct the following actions in reduce organochlorine pesticide inputs to streams (from Phase II Report): · Participate in implementation of USDA sediment reduction program. · Implement sediment reduction BMPs on agricultural lands and other specific sites. · Implement BMPs for urban/industrial storm water runoff and discharges to reduce PCB and organochlorine pesticides.		109 A. Status of participation in the implementation of USDA sediment reduction program in behalf of reducing organochlorine pesticide inputs to streams.	ERP-97-N20	Jul-98	Jun-01	1,680,631	0	1,680,631	Community Alliance with Family Farmers	Judith Redmond		Implementing Program to Reduce the Use of Pesticides and Fertilizers in the Sacramento and San Joaquin Watersheds	The project objectives: 1) Plan and implement and intensive media campaign to enlist mainstream farmers in CAFF's pesticide reduction programs; 2) Continue to coordinate BIOS in San Joaquin, Madera and Colusa Communities through the 1999 growing season; 3) Oversee the transition of BIOS projects to local leadership starting in the fall of 1999; 4) Use the Lighthouse Farm Network to offer consistent technical support to farmers. ***Marcia Gibbs, Community Alliance with Family Farmers (CAFF). Implementation; project completed. Addresses pesticide reduction and water quality. The primary stressor addressed by the project was water quality from agricultural, non-point source contaminants and increased nutrient inputs. The project reduced the use of pesticides that have been shown to degrade water quality. Farmers that enroll in BIOS have been shown to cut by 90% their use of diazinon. The project also decreased the use of other organophosphate insecticides.***
109	SJR	SR			109 B. Status of the implementation of sediment reduction BMPs on agricultural lands and other specific sites to reduce organochlorine pesticides	ERP-97-N20	Jul-98	Jun-01	1,680,631	0	1,680,631	Community Alliance with Family Farmers	Judith Redmond		Implementing Program to Reduce the Use of Pesticides and Fertilizers in the Sacramento and San Joaquin Watersheds	The project objectives: 1) Plan and implement and intensive media campaign to enlist mainstream farmers in CAFF's pesticide reduction programs; 2) Continue to coordinate BIOS in San Joaquin, Madera and Colusa Communities through the 1999 growing season; 3) Oversee the transition of BIOS projects to local leadership starting in the fall of 1999; 4) Use the Lighthouse Farm Network to offer consistent technical support to farmers. ***Marcia Gibbs, Community Alliance with Family Farmers (CAFF). Implementation; project completed. Addresses pesticide reduction and water quality. The primary stressor addressed by the project was water quality from agricultural, non-point source contaminants and increased nutrient inputs. The project reduced the use of pesticides that have been shown to degrade water quality. Farmers that enroll in BIOS have been shown to cut by 90% their use of diazinon. The project also decreased the use of other organophosphate insecticides.***

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
109	SJR	SR			109 B. Status of the implementation of sediment reduction BMPs on agricultural lands and other specific sites to reduce organochlorine pesticides	ERP-95-M06	Oct-95		660,000	0	660,000	Community Alliance with Family Farmers, Foundation	Jill Klein		Biological Integrated Orchard System Almond Expansion Project	Biologically Integrated Orchard System (BIOS) is a three-year project providing for the transfer of information and technology regarding pollution prevention by eliminating diazinon and reducing other pesticides used in the production of California almonds. Project completed. ***Marcia Gibbs, Community Alliance with Family Farmers, Foundation. Implementation/demonstration. In 1998, BIOS almond growers managed a total of 33,820 acres, representing ~ 5% of the bearing and non-bearing almond acreage in California. In 1997, 17% of the total acreage managed by BIOS growers was managed using BIOS practices, ~ fourfold increase. In 1996, 72 participating almond and walnut growers participated in the BIOS program. In 1998, the number of participants increased to 106. The number of BIOS growers who reported using Bacillus thuringiensis (Bt), increased form 33% in 1997 to 60% in 1998. Bt is a safe, selective, biological pesticide and an effective alternative to organophosphates.***
109	SJR	SR			109 B. Status of the implementation of sediment reduction BMPs on agricultural lands and other specific sites to reduce organochlorine pesticides	ERP-02-P36	Jun-03	Jun-06	1,402,159	0	1,402,159	University of California, Davis - Agronomy and Range Science	Dr. Steve Temple		The Ecological and Economic Costs and Benefits of Alternative Agricultural Practices: Sediment, Nutrient, and Pesticides in Runoff from Conservation Tillage and Cover Cropped Systems	The primary goal of this project is to quantify the ecological and economic costs and benefits of alternative agricultural practices in irrigated row cropping systems, at the farm and societal levels. ***Project not completed. This project will determine the impacts of reduced runoffs; hopes to decrease soil organic carbon, measure sediments and pesticides, and conduct analysis of water quality. Steve Temple, UC Davis.***
109	SJR	SR			109 C.Status of Implementing BMPs for urban/industrial storm water runoff and discharges to reduce PCB and organochlorine pesticides.											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 110 -- ROLLED UP SUMMARY

MILESTONE 110 -- Conduct the following trace metals work (from Phase II Report): · Determine spatial and temporal extent of metal pollution. · Determine ecological significance and extent of copper contamination. · Evaluate impacts of other metals such as cadmium, zinc, and chromium. · Participate in Brake Pad Partnership to reduce introduction of copper. · Partner with municipalities on evaluation and implementation of storm water control facilities. · Participate in remediation of mine sites as part of local watershed restoration and Delta restoration.	**PROJECTS REVIEWED -**	**SUMMARY --** No projects have been funded by CBDA to support this milestone in the San Joaquin River Region. However, this issue is being addressed by monitoring performed by the SF Bay Regional Monitoring Program, the development of TMDLs for metals, and the stormwater runoff program in the bay area by the SF Bay Regional Water Quality Control Board. (See latest RMP report http://www.sfei.org/rmp/pulse/POE2004.pdf). See milestones 36, 52 and 82 for additional projects that address this milestone at a landscape level.		**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 110 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
110	SJR	SR	Conduct the following trace metals work (from Phase II Report): · Determine spatial and temporal extent of metal pollution. · Determine ecological significance and extent of copper contamination. · Evaluate impacts of other metals such as cadmium, zinc, and chromium. · Participate in Brake Pad Partnership to reduce introduction of copper. · Partner with municipalities on evaluation and implementation of storm water control facilities. · Participate in remediation of mine sites as part of local watershed restoration and		110 A. Status of determining spatial and temporal extent of trace metal pollution.											
110	SJR	SR			110 B. Status of determining ecological significance and extent of copper contamination.											
110	SJR	SR			110 C. Status of evaluating impacts of other metals such as cadmium, zinc, and chromium											
110	SJR	SR			110 D. Status of participation in Brake Pad Partnership to reduce introduction of copper.											
110	SJR	SR			110 E. Status of partnerships with municipalities on evaluation and implementation of storm water control facilities.											

110	SJR	SR			110 F. Participate in remediation of mine sites as part of local watershed restoration and Delta restoration.											

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 111 -- ROLLED UP SUMMARY

MILESTONE 111 -- Conduct the following unknown toxicity work (from Phase II Report): · Conduct appropriate studies to identify unknown toxicity, and develop management actions as appropriate.		**PROJECTS REVIEWED -**		**SUMMARY --** Milestone 37 (Delta region) summarizes the contracts that address this milestone at a landscape level. There are no contracts funded by ERP that are specific to the San Joaquin region.		**AGENCY NOTES --**	**NOTES CONT'D --**

MULTI SPECIES CONSERVATION STRATEGY MILESTONE 111 -- EVALUATION OF INDIVIDUAL PROJECTS REVIEWED TO FORMULATE THE ROLLED UP SUMMARY

MS Number	REGION	Project Type	Milestone	ERP Targets taken from ERPP Vol 2	MS Components or Questions for field personnel	ERP PROJECT NUMBERS	CONTRACT START DATE	CONTRACT END DATE	CALFED Award	Cost Share	Total Project Cost	Applicant	Principal Investigator	Quantifiable Units	Project Name	Comments
111	SJR	SR	Conduct the following unknown toxicity work (from Phase II Report): · Conduct appropriate studies to identify unknown toxicity, and develop management actions as appropriate.		111 A. Status on conducting appropriate studies to identify unknown toxicity											
111	SJR	SR			111 A. Status on conducting appropriate studies to identify unknown toxicity											
111	SJR	SR			111 A. Status on conducting appropriate studies to identify unknown toxicity											